

What Is Claimed Is:

1. A magnetic marker composed of a magnetic fine particle and a polymer encapsulating the particle, for use in measuring an immunoreaction with a SQUID magnetic sensor, wherein the particle diameter of said magnetic fine particle is 20 to 40 nm and the external diameter of said magnetic marker is 40 to 100 nm, said polymer having carboxyl groups on the surface thereof.
2. The magnetic marker as claimed in Claim 1, wherein the magnetic fine particle is composed of ferrite Fe_3O_4 .
3. The magnetic marker as claimed in Claim 2, wherein the polymer has, on the surface thereof, 500 to 5000 carboxyl groups per particle of the magnetic marker.
4. The magnetic marker as claimed in Claim 3, wherein the polymer has, on the surface thereof, 2000 to 3000 carboxyl groups per particle of the magnetic marker.
5. A method for preparing a magnetic marker composed of a magnetic fine particle and a polymer encapsulating the particle, for use in measuring an immunoreaction with a SQUID magnetic sensor, wherein the particle diameter of the magnetic fine particle is 20 to 40 nm and the external diameter of the magnetic marker is 40 to 100 nm, said polymer having carboxyl groups on the surface thereof, which method comprises the steps of (i) causing the surface of a magnetic fine particle to adsorb a hydrophilic macromonomer having a polymerizable vinyl group at the terminal thereof

and having a molecular weight of 500 to 1000, and then (ii) adding a monomer of a hydrophilic vinyl compound having carboxyl groups and a crosslinking agent for carrying out copolymerization reaction.

6. The method for preparing the magnetic marker as claimed in Claim 5, wherein the macromonomer is polyvinylpyrrolidone, polyoxyethylene or polyacrylamide.